

2. Horn system must be equipped with an indicator or other system to notify the locomotive engineer as to whether the wayside horn is operating as intended in sufficient time to enable the locomotive engineer to sound the locomotive horn for at least 15 seconds prior to arrival at the crossing in the event the wayside horn is not operating as intended;

3. The railroad must adopt an operating rule, bulletin or special instruction requiring that the train horn be sounded if the wayside horn indicator is not visible approaching the crossing or if the wayside horn indicator, or an equivalent system, indicates that the system is not operating as intended;

4. Horn system must provide a minimum sound level of 92 dB(A) and a maximum of 110 dB(A) when measured 100 feet from the centerline of the nearest track;

5. Horn system must sound at a minimum of 15 seconds prior to the train's arrival at the crossing and while the lead locomotive is traveling across the crossing. It is permissible for the horn system to begin to sound simultaneously with activation of the flashing lights or descent of the crossing arm;

6. Horn shall be directed toward approach-ing traffic.

APPENDIX F TO PART 222—DIAGNOSTIC TEAM CONSIDERATIONS

For purposes of this part, a diagnostic team is a group of knowledgeable representatives of parties of interest in a highway-rail grade crossing, organized by the public authority responsible for that crossing who, using crossing safety management principles, evaluate conditions at a grade crossing to make determinations or recommendations for the public authority concerning the safety needs at that crossing. Crossings proposed for inclusion in a quiet zone should be reviewed in the field by a diagnostic team composed of railroad personnel, public safety or law enforcement, engineering personnel from the State agency responsible for grade crossing safety, and other concerned parties.

This diagnostic team, using crossing safety management principles, should evaluate conditions at a grade crossing to make determinations and recommendations concerning safety needs at that crossing. The diagnostic team can evaluate a crossing from many perspectives and can make recommendations as to what safety measures authorized by this part might be utilized to compensate for the silencing of the train horns within the proposed quiet zone.

ALL CROSSINGS WITHIN A PROPOSED QUIET ZONE

The diagnostic team should obtain and review the following information about each crossing within the proposed quiet zone:

1. Current highway traffic volumes and percent of trucks;

2. Posted speed limits on all highway approaches;

3. Maximum allowable train speeds, both passenger and freight;

4. Accident history for each crossing under consideration;

5. School bus or transit bus use at the crossing; and

6. Presence of U.S. DOT grade crossing inventory numbers clearly posted at each of the crossings in question.

The diagnostic team should obtain all inventory information for each crossing and should check, while in the field, to see that inventory information is up-to-date and accurate. Outdated inventory information should be updated as part of the quiet zone development process.

When in the field, the diagnostic team should take note of the physical characteristics of each crossing, including the following items:

1. Can any of the crossings within the proposed quiet zone be closed or consolidated with another adjacent crossing? Crossing elimination should always be the preferred alternative and it should be explored for crossings within the proposed quiet zone.

2. What is the number of lanes on each highway approach? Note the pavement condition on each approach, as well as the condition of the crossing itself.

3. Is the grade crossing surface smooth, well graded and free draining?

4. Does the alignment of the railroad tracks at the crossing create any problems for road users on the crossing? Are the tracks in superelevation (are they banked on a curve?) and does this create a conflict with the vertical alignment of the crossing roadway?

5. Note the distance to the nearest intersection or traffic signal on each approach (if within 500 feet or so of the crossing or if the signal or intersection is determined to have a potential impact on highway traffic at the crossing because of queuing or other special problems).

6. If a roadway that runs parallel to the railroad tracks is within 100 feet of the railroad tracks when it crosses an intersecting road that also crosses the tracks, the appropriate advance warning signs should be posted as shown in the MUTCD.

7. Is the posted highway speed (on each approach to the crossing) appropriate for the alignment of the roadway and the configuration of the crossing?

8. Does the vertical alignment of the crossing create the potential for a "hump crossing" where long, low-clearance vehicles might get stuck on the crossing?

9. What are the grade crossing warning devices in place at each crossing? Flashing lights and gates are required for each public

crossing in a New Quiet Zone. Are all required warning devices, signals, pavement markings and advance signing in place, visible and in good condition for both day and night time visibility?

10. What kind of train detection is in place at each crossing? Are these systems old or outmoded; are they in need of replacement, upgrading, or refurbishment?

11. Are there sidings or other tracks adjacent to the crossing that are often used to store railroad cars, locomotives, or other equipment that could obscure the vision of road users as they approach the crossings in the quiet zone? Clear visibility may help to reduce automatic warning device violations.

12. Are motorists currently violating the warning devices at any of the crossings at an excessive rate?

13. Do collision statistics for the corridor indicate any potential problems at any of the crossings?

14. If school buses or transit buses use crossings within the proposed quiet zone corridor, can they be rerouted to use a single crossing within or outside of the quiet zone?

PRIVATE CROSSINGS WITHIN A PROPOSED QUIET ZONE

In addition to the items discussed above, a diagnostic team should note the following issues when examining any private crossings within a proposed quiet zone:

1. How often is the private crossing used?
2. What kind of signing or pavement markings are in place at the private crossing?
3. What types of vehicles use the private crossing?

School buses
Large trucks
Hazmat carriers
Farm equipment

4. What is the volume, speed and type of train traffic over the crossing?

5. Do passenger trains use the crossing?

6. Do approaching trains sound the horn at the private crossing?

State or local law requires it?

Railroad safety rule requires it?

7. Are there any nearby crossings where train horns sound that might also provide some warning if train horns were not sounded at the private crossing?

8. What are the approach (corner) sight distances?

9. What is the clearing sight distance for all approaches?

10. What are the private roadway approach grades?

11. What are the private roadway pavement surfaces?

PEDESTRIAN CROSSINGS WITHIN A PROPOSED QUIET ZONE

In addition to the items discussed in the section titled, “All crossings within a proposed quiet zone”, a diagnostic team should note the following issues when examining any pedestrian crossings within a proposed quiet zone:

1. How often is the pedestrian crossing used?

2. What kind of signing or pavement markings are in place at the pedestrian crossing?

3. What is the volume, speed, and type of train traffic over the crossing?

4. Do approaching trains sound the horn at the pedestrian crossing?

State or local law requires it?

Railroad safety rule requires it?

5. Are there any crossings where train horns sound that might also provide some warning if train horns were not sounded at the pedestrian crossing?

6. What are the approach sight distances?

7. What is the clearing sight distance for all approaches?

APPENDIX G TO PART 222—EXCESS RISK ESTIMATES FOR PUBLIC HIGHWAY- RAIL GRADE CROSSINGS

BAN EFFECTS/TRAIN HORN EFFECTIVENESS [Summary table]

Warning type	Excess risk estimate
Nation (Except Florida East Coast Railway and Chicago Region Crossings)	
Passive	74.9.
Flashers only	30.9.
Flashers with gates	66.8.
Florida East Coast Railway Crossings	
Flashers with gates	90.9.
Chicago Region Crossings	
Passive	To be determined.
Flashers only	To be determined.
Flashers with gates	To be determined.

NOTE ONE: The warning type column reflects primary warning device types. FRA is aware that a variety of arrangements are in place at individual crossings.

NOTE TWO: The “excess risk estimate” is a figure that represents the amount by which collision frequency has been estimated to increase when routine locomotive horn sounding is restricted at public highway-rail grade crossings.

[74 FR 46394, Sept. 9, 2009]

APPENDIX H TO PART 222—SCHEDULE OF CIVIL PENALTIES¹